

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-008627**Date Inspected:** 19-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2230**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Steve Barnett, William Buck**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge-K Components**Summary of Items Observed:**

Summary of Items Observed: On this date, Caltrans Quality Assurance Inspector (QA) Clete Henke was present at Oregon Iron Works, Inc. (OIW) in Clackamas, OR for observation of fabrication of the Hinge K Pipe Beams and related activities including in process welding and OIW Quality Control (QC) visual and nondestructive testing. The following observations were recorded:

**OIW Fabrication Shop-Bay 3****Hinge-K Pipe Beam Base Assembly 102A-1:**

a111-1 forging to a110-1 base plate

The QA Inspector intermittently monitored OIW welder Vincent Vu (WID V7) during in progress Submerged Arc Welding (SAW) at fillet joints W1-70, W1-74 & W1-78 joining c106 stiffeners to a107 stiffener and W1-165 partial joint penetration (PJP) connection joining b106 and ab106 stiffeners. OIW welder Phuong Huynh (WID H4) was also observed during in-process SAW at PJP joint W1-165 joining b106 and a106 stiffeners. The QA Inspector randomly observed as OIW QC Inspector Bill Buck performed Magnetic particle Testing (MT) and Visual Inspection (VT) of completed root pass at weld joints referenced above. Mr. Buck performed informational MT at root pass of the noted fillet joints at the behest of OIW QC management. Mr. Buck stated that he had located no rejectable indications. The QA Inspector subsequently performed 100% VT & 50% MT verification at the noted PJP connections W1-164 & W1-165; finding the root passes to be in general compliance with contract documents. Please reference TL-6028 report for this date for detailed information. The QA Inspector intermittently observed as welders H4 & V7 continued to deposit SAW fill and cover passes in the horizontal (2G) position in accordance with approved welding procedures 4020 rev. 2. The QA Inspector noted the OIW welders were maintaining continuous preheat utilizing a torch. OIW QC Inspector Bill Buck was observed regularly monitoring

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and recording the in process SAW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the SAW parameters and minimum preheat/interpass temperature appeared to be in general compliance with the contract requirements -- (W1-32: 35.2 volts, 570 amperes, 432mm/min travel speed. Welder V7 was subsequently observed grinding at interior weld terminations.

### Hinge-K Pipe Beam Base Assembly 102A-2:

a111-2 forging to a110-2 base plate

The QA Inspector was notified by OIW QC Inspector Steve Barnett that QC had completed Magnetic particle Testing (MT) and Visual Inspection (VT) of excavated and prepared repair location on a111-2 forging identified as CWR-008. The QA Inspector subsequently performed 100% VT & 100% MT verification at the affected PJP connections W1-147 & W1-138 prior to initiation of repair activity; finding the excavated and prepared areas to be in general compliance with approved Critical Weld Repair (CWR) report. Please reference TI-6028 report for this date for detailed information.

### OIW Fabrication Shop-Bay 6

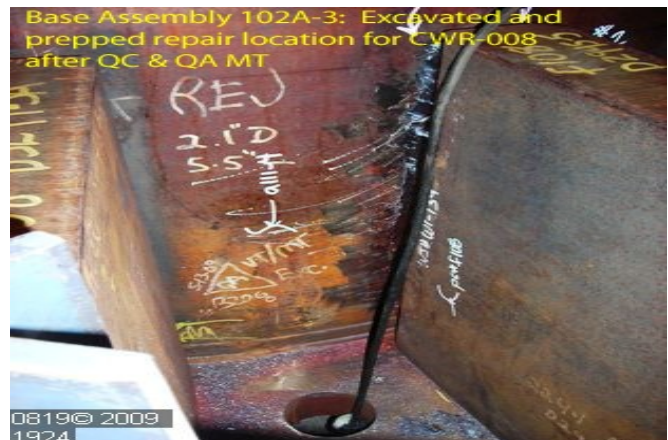
#### Hinge-K Pipe Beam Fuse Assembly 120A-2:

a124-3 to a124-11

The QA Inspector intermittently observed OIW qualified welder Bonine Savanh (WID S74) during in-process welding of Soudotape 316L stainless steel overlay to hinge k pipe beam fuse sub-assembly 120A-2. The weld joint is identified as 316L 3rd Layer. Mr. Savanh was observed welding in the flat position utilizing automatic electro slag welding (ESW) overlay process with a .5mm x 60mm Soudotape 316L stainless electrode, filler metal brand Soudotape class EQ316L automatic. An OIW helper was observed assisting welder S74 during ESW activity. The QA Inspector observed OIW QC Inspector Steve Barnett regularly monitoring and recording the in process ESW parameters. The QA Inspector also intermittently observed in process welding parameters and determined that the ESW parameters (1200 amps, 25.7 volts, 267mm/min travel speed) and minimum preheat temperature of 70° F appeared to be in general compliance with the contract requirements and approved OIW Welding Procedure Specification (WPS) 7003.

#### Material, Equipment, and Labor Tracking:

The QA Inspector performed verification of personnel involved with this project and equipment in use. The QA Inspector accounted for 4 OIW production personnel and 2 Quality Control Inspector present on this date.



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### Summary of Conversations:

As noted in the body of the report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Henke,Clete
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Quality Assurance Inspector
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<b>Reviewed By:</b>	Adame,Joe
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QA Reviewer
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